

Section 1. Registration Information

Source Identification

Facility Name:	Lake Mary Water Treatment Plant
Parent Company #1 Name:	City of Flagstaff
Parent Company #2 Name:	

Submission and Acceptance

Submission Type:	Re-submission
Subsequent RMP Submission Reason:	5-year update (40 CFR 68.190(b)(1))
Description:	
Receipt Date:	19-Mar-2014
Postmark Date:	19-Mar-2014
Next Due Date:	19-Mar-2019
Completeness Check Date:	19-Mar-2014
Complete RMP:	Yes
De-Registration / Closed Reason:	
De-Registration / Closed Reason Other Text:	
De-Registered / Closed Date:	
De-Registered / Closed Effective Date:	
Certification Received:	Yes

Facility Identification

EPA Facility Identifier:	1000 0003 6276
Other EPA Systems Facility ID:	

Dun and Bradstreet Numbers (DUNS)

Facility DUNS:	
Parent Company #1 DUNS:	88302625
Parent Company #2 DUNS:	88302625

Facility Location Address

Street 1:	4500 S. Lake Mary Road
Street 2:	
City:	Flagstaff
State:	ARIZONA
ZIP:	86001
ZIP4:	
County:	COCONINO

Facility Latitude and Longitude

Latitude (decimal):	35.150414
Longitude (decimal):	-111.651786
Lat/Long Method:	Interpolation - Map
Lat/Long Description:	Center of Facility
Horizontal Accuracy Measure:	12
Horizontal Reference Datum Name:	North American Datum of 1983
Source Map Scale Number:	24000

Owner or Operator

Operator Name:	City of Flagstaff
Operator Phone:	(928) 774-5281

Mailing Address

Operator Street 1:	4500 S. Lake Mary Road
Operator Street 2:	
Operator City:	Flagstaff
Operator State:	ARIZONA
Operator ZIP:	86005
Operator ZIP4:	
Operator Foreign State or Province:	
Operator Foreign ZIP:	
Operator Foreign Country:	

Name and title of person or position responsible for Part 68 (RMP) Implementation

RMP Name of Person:	Mark Richardson
RMP Title of Person or Position:	Utilities Operations Manager
RMP E-mail Address:	mrichardson@flagstaffaz.gov

Emergency Contact

Emergency Contact Name:	Thomas Bolyen
Emergency Contact Title:	Water Production Manager
Emergency Contact Phone:	(928) 774-0262
Emergency Contact 24-Hour Phone:	(928) 637-8165
Emergency Contact Ext. or PIN:	
Emergency Contact E-mail Address:	TBolyen@flagstaffaz.gov

Other Points of Contact

Facility or Parent Company E-mail Address:	
Facility Public Contact Phone:	(928) 774-0262
Facility or Parent Company WWW Homepage Address:	www.flagstaffaz.gov

Local Emergency Planning Committee

LEPC:	Coconino County LEPC
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Full Time Equivalent Employees

Number of Full Time Employees (FTE) on Site:	11
FTE Claimed as CBI:	

Covered By

OSHA PSM :	Yes
EPCRA 302 :	Yes
CAA Title V:	
Air Operating Permit ID:	

OSHA Ranking

OSHA Star or Merit Ranking:

Last Safety Inspection

Last Safety Inspection (By an External Agency) Date:	01-Nov-2013
Last Safety Inspection Performed By an External Agency:	State environmental agency

Predictive Filing

Did this RMP involve predictive filing?:

Preparer Information

Preparer Name:	MunicipalH2O - Melanie Van Son
Preparer Phone:	(800) 897-9425
Preparer Street 1:	650 S. Shackelford Road
Preparer Street 2:	Suite 325
Preparer City:	Little Rock
Preparer State:	ARKANSAS
Preparer ZIP:	72211
Preparer ZIP4:	
Preparer Foreign State:	
Preparer Foreign Country:	
Preparer Foreign ZIP:	

Confidential Business Information (CBI)

CBI Claimed:
Substantiation Provided:
Unsanitized RMP Provided:

Reportable Accidents

Reportable Accidents:	See Section 6. Accident History below to determine if there were any accidents reported for this RMP.
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Process Chemicals

Process ID:	1000048865
Description:	Chlorination
Process Chemical ID:	1000059284
Program Level:	Program Level 3 process
Chemical Name:	Chlorine
CAS Number:	7782-50-5
Quantity (lbs):	14000
CBI Claimed:	
Flammable/Toxic:	Toxic

Process ID:	1000048866
Description:	Chlorine Storage
Process Chemical ID:	1000059286
Program Level:	Program Level 3 process
Chemical Name:	Chlorine
CAS Number:	7782-50-5
Quantity (lbs):	6000
CBI Claimed:	
Flammable/Toxic:	Toxic

Process NAICS

Process ID:	1000048865
Process NAICS ID:	1000049302
Program Level:	Program Level 3 process
NAICS Code:	22131
NAICS Description:	Water Supply and Irrigation Systems

Process ID:	1000048866
Process NAICS ID:	1000049303
Program Level:	Program Level 3 process
NAICS Code:	22131
NAICS Description:	Water Supply and Irrigation Systems

Section 2. Toxics: Worst Case

Toxic Worst ID: 1000039869

Percent Weight:	100.0
Physical State:	Gas liquified by pressure
Model Used:	EPA's RMP*Comp(TM)
Release Duration (mins):	10
Wind Speed (m/sec):	1.5
Atmospheric Stability Class:	F
Topography:	Rural

Passive Mitigation Considered

Dikes:
Enclosures:
Berms:
Drains:
Sumps:
Other Type:

Toxic Worst ID: 1000039871

Percent Weight:	100.0
Physical State:	Gas liquified by pressure
Model Used:	EPA's RMP*Comp(TM)
Release Duration (mins):	10
Wind Speed (m/sec):	1.5
Atmospheric Stability Class:	F
Topography:	Rural

Passive Mitigation Considered

Dikes:
Enclosures:
Berms:
Drains:
Sumps:
Other Type:

Section 3. Toxics: Alternative Release

Toxic Alter ID: 1000042157

Percent Weight:	100.0
Physical State:	Gas liquified by pressure
Model Used:	EPA's RMP*Comp(TM)
Wind Speed (m/sec):	3.0
Atmospheric Stability Class:	D
Topography:	Rural

Passive Mitigation Considered

Dikes:
Enclosures:
Berms:
Drains:
Sumps:
Other Type:

Active Mitigation Considered

Sprinkler System:
Deluge System:
Water Curtain:
Neutralization:
Excess Flow Valve:
Flares:
Scrubbers:
Emergency Shutdown:
Other Type:

Toxic Alter ID: 1000042171

Percent Weight:	100.0
Physical State:	Gas liquified by pressure
Model Used:	EPA's RMP*Comp(TM)
Wind Speed (m/sec):	3.0
Atmospheric Stability Class:	D
Topography:	Rural

Passive Mitigation Considered

Dikes:
Enclosures:
Berms:
Drains:
Sumps:
Other Type:

Active Mitigation Considered

Sprinkler System:
Deluge System:
Water Curtain:
Neutralization:
Excess Flow Valve:
Flares:
Scrubbers:

Emergency Shutdown:

Other Type:

Section 4. Flammables: Worst Case

No records found.

Section 5. Flammables: Alternative Release

No records found.

Section 6. Accident History

No records found.

Section 7. Program Level 3

Description

Prevention Program - Chlorination

The City takes an active role in preventing accidental releases by ensuring that its employees are properly trained in the safe operation of covered processes and the safe handling of treatment chemicals. The City has also established and maintains procedures for emergency notification and response. These are reviewed with employees on a periodic basis and revised to accommodate changes in staffing when they occur.

To increase employee safety and awareness, the City:

Maintains up-to-date safety information and operating procedures,

Performs regular preventative maintenance,

Provides periodic refresher training on safe handling of chemicals, and

Conducts periodic safety drills.

Program Level 3 Prevention Program Chemicals

Prevention Program Chemical ID:	1000050445
Chemical Name:	Chlorine
Flammable/Toxic:	Toxic
CAS Number:	7782-50-5

Prevention Program Level 3 ID:	1000042282
NAICS Code:	22131

Safety Information

Safety Review Date (The date on which the safety information was last reviewed or revised):	26-Feb-2014
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Process Hazard Analysis (PHA)

PHA Completion Date (Date of last PHA or PHA update):	26-Feb-2014
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The Technique Used

What If:	
Checklist:	
What If/Checklist:	Yes
HAZOP:	
Failure Mode and Effects Analysis:	
Fault Tree Analysis:	
Other Technique Used:	
PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update):	27-Mar-2014

Major Hazards Identified

Toxic Release:	Yes
Fire:	Yes

Explosion:	
Runaway Reaction:	
Polymerization:	
Overpressurization:	
Corrosion:	Yes
Overfilling:	
Contamination:	
Equipment Failure:	Yes
Loss of Cooling, Heating, Electricity, Instrument Air:	
Earthquake:	Yes
Floods (Flood Plain):	
Tornado:	
Hurricanes:	
Other Major Hazard Identified:	

Process Controls in Use

Vents:	Yes
Relief Valves:	Yes
Check Valves:	Yes
Scrubbers:	Yes
Flares:	
Manual Shutoffs:	Yes
Automatic Shutoffs:	Yes
Interlocks:	
Alarms and Procedures:	Yes
Keyed Bypass:	
Emergency Air Supply:	
Emergency Power:	
Backup Pump:	
Grounding Equipment:	
Inhibitor Addition:	
Rupture Disks:	
Excess Flow Device:	
Quench System:	
Purge System:	
None:	
Other Process Control in Use:	

Mitigation Systems in Use

Sprinkler System:	Yes
Dikes:	
Fire Walls:	Yes
Blast Walls:	
Deluge System:	
Water Curtain:	
Enclosure:	Yes
Neutralization:	
None:	
Other Mitigation System in Use:	

Monitoring/Detection Systems in Use

Process Area Detectors: Yes
Perimeter Monitors:
None:
Other Monitoring/Detection System in Use:

Changes Since Last PHA Update

Reduction in Chemical Inventory:
Increase in Chemical Inventory:
Change Process Parameters:
Installation of Process Controls:
Installation of Process Detection Systems:
Installation of Perimeter Monitoring Systems:
Installation of Mitigation Systems:
None Recommended: Yes
None:
Other Changes Since Last PHA or PHA Update:

Review of Operating Procedures

Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): 26-Feb-2014

Training

Training Revision Date (The date of the most recent review or revision of training programs): 26-Feb-2014

The Type of Training Provided

Classroom: Yes
On the Job: Yes
Other Training:

The Type of Competency Testing Used

Written Tests: Yes
Oral Tests: Yes
Demonstration: Yes
Observation: Yes
Other Type of Competency Testing Used:

Maintenance

Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): 26-Feb-2014

Equipment Inspection Date (The date of the most recent equipment inspection or test): 18-Mar-2014

Equipment Tested (Equipment most recently inspected or tested): All process equipment is inspected daily as part of normal operations.

Management of Change

Change Management Date (The date of the most recent change that triggered management of change procedures): 04-Aug-2008

Change Management Revision Date (The date of the most recent review or revision of management of change procedures): 26-Feb-2014

Pre-Startup Review

Pre-Startup Review Date (The date of the most recent pre-startup review): 16-Jan-2008

Compliance Audits

Compliance Audit Date (The date of the most recent compliance audit): 26-Feb-2014

Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): 31-May-2014

Incident Investigation

Incident Investigation Date (The date of the most recent incident investigation (if any)):

Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation):

Employee Participation Plans

Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): 26-Feb-2014

Hot Work Permit Procedures

Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): 26-Feb-2014

Contractor Safety Procedures

Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): 26-Feb-2014

Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): 01-Feb-2008

Confidential Business Information

CBI Claimed:

Description

Prevention Program - Chlorine storage

Safety, health, and environmental responsibilities must be managed by line management as they manage their other responsibilities including production, quality, cost, and personnel relations. The same basic management techniques are used to manage safety, health, and environmental requirements as for production and quality management. These include planning, organizing, leading, and controlling assigned responsibilities.

Responsibility for protecting people, property, and the environment begins with the ranking facility manager and extends through all levels of the line management organization including employees. Each person in the line organization from the ranking manager to the employees has specific safety, health, and environmental responsibilities that they cannot delegate to others. They must effectively discharge their personal responsibility for protecting people, property, and the environment to achieve a safe and healthful working environment.

One important part of the City of Flagstaff safety and health program involves the prevention of unwanted releases of hazardous chemicals into locations which could expose employees and others to serious hazards as well as the environment and people in the surrounding community.

This Risk Management Program (RMP) describes the management system for protecting people, property, and the environment from catastrophic releases of hazardous substances in the workplace. This is accomplished by systematically evaluating the process using approaches to assess the effectiveness of the process design, technology, operations, maintenance, non-routine activities, procedures, emergency preparedness, training, and other process elements. These are described in more detail throughout this RMP.

This RMP complies with EPA standard 40 CFR 68, Risk Management Program rule and OSHA standard 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals.

Program Level 3 Prevention Program Chemicals

Prevention Program Chemical ID:	1000050470
Chemical Name:	Chlorine
Flammable/Toxic:	Toxic
CAS Number:	7782-50-5

Prevention Program Level 3 ID:	1000042303
NAICS Code:	22131

Safety Information

Safety Review Date (The date on which the safety information was last reviewed or revised):	26-Feb-2014
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Process Hazard Analysis (PHA)

PHA Completion Date (Date of last PHA or PHA update):	26-Feb-2014
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The Technique Used

What If:	
Checklist:	
What If/Checklist:	Yes

HAZOP:

Failure Mode and Effects Analysis:

Fault Tree Analysis:

Other Technique Used:

PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): 26-Feb-2014

Major Hazards Identified

Toxic Release: Yes

Fire:

Explosion:

Runaway Reaction:

Polymerization:

Overpressurization:

Corrosion: Yes

Overfilling:

Contamination:

Equipment Failure: Yes

Loss of Cooling, Heating, Electricity, Instrument Air:

Earthquake:

Floods (Flood Plain):

Tornado:

Hurricanes:

Other Major Hazard Identified:

Process Controls in Use

Vents: Yes

Relief Valves:

Check Valves:

Scrubbers:

Flares:

Manual Shutoffs:

Automatic Shutoffs:

Interlocks:

Alarms and Procedures: Yes

Keyed Bypass:

Emergency Air Supply:

Emergency Power:

Backup Pump:

Grounding Equipment:

Inhibitor Addition:

Rupture Disks:

Excess Flow Device:

Quench System:

Purge System:

None:

Other Process Control in Use:

Mitigation Systems in Use

Sprinkler System: Yes

Dikes:

Fire Walls:

Blast Walls:
Deluge System:
Water Curtain:
Enclosure: Yes
Neutralization:
None:
Other Mitigation System in Use:

Monitoring/Detection Systems in Use

Process Area Detectors: Yes
Perimeter Monitors:
None:
Other Monitoring/Detection System in Use:

Changes Since Last PHA Update

Reduction in Chemical Inventory:
Increase in Chemical Inventory:
Change Process Parameters:
Installation of Process Controls:
Installation of Process Detection Systems:
Installation of Perimeter Monitoring Systems:
Installation of Mitigation Systems:
None Recommended: Yes
None:
Other Changes Since Last PHA or PHA Update:

Review of Operating Procedures

Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): 26-Feb-2014

Training

Training Revision Date (The date of the most recent review or revision of training programs): 26-Feb-2014

The Type of Training Provided

Classroom: Yes
On the Job: Yes
Other Training:

The Type of Competency Testing Used

Written Tests: Yes
Oral Tests: Yes
Demonstration: Yes
Observation:
Other Type of Competency Testing Used:

Maintenance

Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): 26-Feb-2014

Equipment Inspection Date (The date of the most recent equipment inspection or test): 18-Mar-2014

Equipment Tested (Equipment most recently inspected or tested): All process equipment is inspected daily as part of normal operations.

Management of Change

Change Management Date (The date of the most recent change that triggered management of change procedures):

Change Management Revision Date (The date of the most recent review or revision of management of change procedures): 26-Feb-2014

Pre-Startup Review

Pre-Startup Review Date (The date of the most recent pre-startup review):

Compliance Audits

Compliance Audit Date (The date of the most recent compliance audit): 26-Feb-2014

Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): 31-May-2014

Incident Investigation

Incident Investigation Date (The date of the most recent incident investigation (if any)):

Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation):

Employee Participation Plans

Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): 26-Feb-2014

Hot Work Permit Procedures

Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): 26-Feb-2014

Contractor Safety Procedures

Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): 26-Feb-2014

Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance):

Confidential Business Information

CBI Claimed:

Section 8. Program Level 2

Section 9. Emergency Response

Written Emergency Response (ER) Plan

Community Plan (Is facility included in written community emergency response plan?): Yes

Facility Plan (Does facility have its own written emergency response plan?):

Response Actions (Does ER plan include specific actions to be taken in response to accidental releases of regulated substance(s)?):

Public Information (Does ER plan include procedures for informing the public and local agencies responding to accidental release?):

Healthcare (Does facility's ER plan include information on emergency health care?):

Emergency Response Review

Review Date (Date of most recent review or update of facility's ER plan):

Emergency Response Training

Training Date (Date of most recent review or update of facility's employees):

Local Agency

Agency Name (Name of local agency with which the facility ER plan or response activities are coordinated): Flagstaff Fire Dept, Station 6

Agency Phone Number (Phone number of local agency with which the facility ER plan or response activities are coordinated): (928) 556-1326

Subject to

OSHA Regulations at 29 CFR 1910.38: Yes

OSHA Regulations at 29 CFR 1910.120: Yes

Clean Water Regulations at 40 CFR 112:

RCRA Regulations at CFR 264, 265, and 279.52:

OPA 90 Regulations at 40 CFR 112, 33 CFR 154, 49 CFR 194, or 30 CFR 254:

State EPCRA Rules or Laws: Yes

Other (Specify):

Executive Summary

Executive Summary

The Lake Mary Water Treatment Plant (WTP) is one of the facilities owned and operated by the City of Flagstaff. Lake Mary WTP has prepared a Risk Management Plan (RMP) in accordance with the EPA and OSHA regulatory requirements. A brief overview of the RMP and the associated policies at this facility is described below.

Prevention and Response Policies

The City takes an active role in preventing accidental releases by ensuring that its employees are properly trained in the safe operation of covered processes and the safe handling of treatment chemicals. The City has also established and maintains procedures for emergency notification and response. These are reviewed with employees on a periodic basis and revised to accommodate changes in staffing when they occur. To increase employee safety and awareness, the City:

- Maintains up-to-date safety information and operating procedures,
- Performs regular preventative maintenance,
- Provides periodic refresher training on safe handling of chemicals, and
- Conducts periodic drills.

Facility Description and Regulated Substances

Lake Mary WTP utilizes surface water supplies to produce potable water through a series of physical and chemical treatment operations. The regulated substance handled at Lake Mary WTP is chlorine. The chlorine is stored in 1-ton containers and 150 pound cylinders. The WTP stores up to seven 1-ton containers and up to forty 150 pound cylinders for a maximum chlorine inventory of 20,000 pounds. The 1-ton containers are used in the on-site chemical processes while the 150 pound cylinders are stored at the WTP for transfer and use at other City locations.

Release Scenarios

Worst-case and alternative release scenarios have been determined after careful review of the regulation and consideration of the storage vessel configuration at the facility. Analyses of chemical releases from 1-ton containers and 150 pound cylinders were considered. Due to the presence of an airport landing strip directly to the west of the facility and limited variation in elevation in the immediate area, rural air modeling scenarios were conducted for the Hazard Assessment. The rural designation provides a more conservative model, thus ensuring that all possible offsite consequences are considered when planning for emergencies.

Prevention Steps for Chlorine

The prevention program fulfills the requirements of the OSHA Process Safety Management (PSM) rule and the EPA RMP rule, and includes:

- formal and on-the-job training,
- written operating procedures, and
- a process equipment preventive maintenance program.

Accident History

There has been no release of the covered chemical in the past five years.

Emergency Response Program

Lake Mary WTP has established and maintains an emergency response program that is coordinated with local response agencies. The goals of the program are to protect on-site employees from the hazardous effects of a release and to minimize the effects of releases on the general public. The program is routinely reviewed and updated to reflect personnel and regulatory changes.

Planned Changes for Improved Safety

Ideas for changes to improve safety are actively sought from employees. Employee meetings that focus on safety issues are held regularly at the facility. Employees are encouraged and trained to recognize hazards and present ideas to eliminate them or to minimize the potential consequences of those hazards.

During the development of this RMP document, a process hazard analysis of the chlorine system was conducted with key employees to fulfill the prevention program requirements. During these sessions, recommendations were made for the purpose of

improving safety and preventing accidental chemical releases. Each recommendation will be or has been considered for implementation. In addition, the exercise provided all affected employees with a heightened awareness of safety issues related to the covered processes.